

20949

S/079/61/031/004/003/006
B118/B206

5.3400

AUTHORS: Voronkov, M.G. and Rabkina, S.M.

TITLE: Studies in the field of alkoxy silanes.
XVI. Reaction of tetraalkoxy silanes with ketones

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 4, 1961, 1259 - 1265

TEXT: In addition of their paper (Ref. 1: ZhOKh., 30, 1955 (1960)), and considering the available methods of synthesizing aldehyde and ketone acetals, the authors of the present paper studied the effect of substituting methyl radicals for the ethoxy groups in tetraethoxy silane on acetalization. For this purpose, acetone and methyl-ethyl ketone were allowed to react with methyl ethoxy silanes of the formula $(CH_3)_nSi(OC_2H_5)_{4-n}$ ($n=1-3$). Substitution of methyl groups for ethoxy groups on the silicon atom considerably reduced the capability of ethoxy silanes to acetalize ketones. The diethyl ketal yield in the reaction of methyl-ethyl ketone with dimethyl diethoxy silane ($n=2$) was quite low, whereas no ketal was formed in the reaction of acetone with trimethyl ethoxy silane.

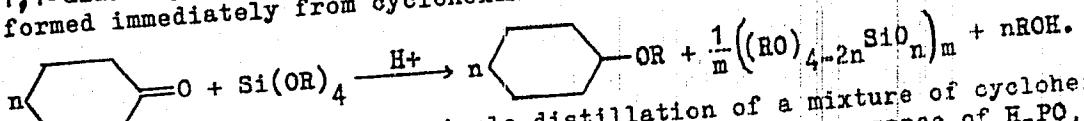
Card 1/6
3

20949

S/079/61/031/004/003/006
B118/B208

Studies in the field of alkoxyl ...

lane. As acetals in general, and ketals in particular, split off alcohol at elevated temperatures, the synthesized acetals were distilled in the presence of Na or its alcoholate, the acetals otherwise being contaminated by alcohol and the corresponding α, β -unsaturated ether. The ketals of cyclohexanone and its derivatives readily split off alcohol during distillation, and are converted to 1-alkoxy cyclohexenes. This ability of 1,1-dialkoxy cyclohexanes easily yields 1-alkoxy cyclohexenes which are formed immediately from cyclohexanone and tetraalkoxy silanes.



Synthesis was performed by simple distillation of a mixture of cyclohexanone and the corresponding tetraalkoxy silane in the presence of H_3PO_4 .

This mixture had previously been boiled for 8-14 hr. Nearly all the alcohol is first distilled off, and immediately afterwards the reaction product containing some alcohol. It was purified by distillation on Na, most suitably at low pressure. Five 1-alkoxy cyclohexenes were synthesized in

Card 2/A
3

20949

S/079/61/031/004/003/006
B118/B208

Studies in the field of alkoxy ...

this way with yields between 55 and 70% (Table). The presence of a certain quantity of alcohol in the reaction product is important in acetalization. It was shown that the reaction of tetraalkoxy silanes with aliphatic and alicyclic ketones takes place in the presence of anhydrous orthophosphoric acid as a catalyst and in the absence of alcohol, forming the corresponding ketals. Eight ketals were obtained and identified in this way, as well as the acetal of butyraldehyde. The opinion expressed in publications that aldehydes are acetalized more easily than ketones may only be explained by the fact that ketals hydrolyze more rapidly than aldehyde acetals. Yu.N. Platonov is thanked for making the analyses. There are 1 figure, 1 table, and 26 references: 14 Soviet-bloc and 12 non-Soviet-bloc. The 2 references to English-language publications read as follows: H.E. Carswell, H. Adkins, J.Am.Chem.Soc., 50, 235, (1928); G.L. Pfeifer, H. Adkins, J.Am.Chem.Soc., 53, 1043 (1931). X

ASSOCIATION: Institut khimii silikatov Akademii nauk SSSR
(Institute of Silicate Chemistry of the Academy of Sciences USSR)

Card. 3/6

3

SERGEYEVA, Z.I.; MATVEYEVA, Z.M.; VORONKOV, M.G.

Organosilicon ethers of ketoximes and of benzaldehydes and
o-hydroxybenzaldehyde oximes. Zhur. ob. khim. 31 no. 6: 2017-
2023 Je '61. (MIRA 14:6)

1. Leningradskiy gosudarstvennyy universitet i Institut khimii
silikatov AN SSSR.
(Silicon organic compounds) (Ketones) (Benzaldehyde)

15.6400 1583

22435
S/080/61/034/007/010/016
D223/D305

AUTHORS: Voronkov, M.G., Sharonov, G.P., and Dolbin, V.V.

TITLE: Effect of the nature of sulpho-organic compounds in oil on the frictional wear of metallic surfaces

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 7, 1961,
1562 - 1569

TEXT: The initial wear of new machine parts during the "running in" time can be accelerated by use of sulphurated oils; actual trials have given a time period of 1.5 - 2.0 hours. (Ref. 1: G.P. Sharonov, V.S. Nikandrov, Tankist, 9, 54, 1957). In this connection investigation into the effect of sulphur compounds in oil on running-in and initial machine wear is important both from the theoretical and practical aspects. The article gives the results of investigations on sulphurated oil, its nature, and surveys new sulphurous additions to the oil. The sulphurated oils "industrial 50" and "spindle AV" were produced as follows: To the heated oil

Card 1/7

22435

S/080/61/034/007/010/016

D223/D305

Effect of the nature of ...

in a bath at 130-135°C, slowly and with continuous stirring 4.5 wt. % of sulphur flour was added - the additions taking 2 hours - and gradually raising the oil temperature to 150°C. The oil was kept at this temperature for 24 hours, continuously stirring, the total heating time being 28 hours. The sulphurated oil "industrial 50" was obtained containing 4.23 % of sulphur (Ref. 3: Ye.Ya. Anten, N.V. Mitrofanova, T.N. Abramova, G.P. Sharonov, V.S. Nikandrov, Avt. svid. 20319, 1959). The testing on copper sheets showed the disappearance of corrosion for "spindle AV" after 9 hours of sulphuration and for "industrial 50" after 6 hours. The removal of corrosion by the action of sulphur and with increase in the sulphuration time of oil is probably due to the transition of free sulphur into compounded, as well as the elimination from the oil of H₂S and decomposition of mercaptans, since H₂S is a product of the reaction of sulphur and hydrocarbons. The friction experiments are then described using machine MI and lubricant MT-16, obtained from sulphurated and emba natural crude oil. These oils had similar viscosities and contained 1.11 and 0.41 % of natural sulphur respec-

Card 2/7

22435

S/080/61/034/007/010/016
D223/D305

Effect of the nature of ...

tively. In addition to emba crude oil, sulphurated oil was added containing 1.11 % of sulphur, of which 0.41 % was natural sulphur. The frictional drum was made of steel 40X having a microhardness 300-310 while the brake was made from steel 45 which after heat treatment showed a microhardness of 660-680. Fig. 2 shows the curves of temperature change of the surface layer of the brake and frictional movement against the working time of steel samples. Since experimental time was 8 hours per day the curves show discontinuity. It follows that pretreatment of samples using emba oil MT-16 is complete in 68 hours (curve 3, Fig. 2). By this time the frictional movement and temperature of the surface layer measured by a thermocouple have reached their minimum values. The pretreatment of samples in emba oil to which sulphurated oil was added containing 1.11 % of sulphur, was complete in 5 hours (curve 1, Fig. 2) and the minimum values of frictional movement and surface layer temperature did not change after an additional 65 hours. Samples lubricated with MT-16 from crude oil with 1.11 % of natural sulphur were not complete in 70 hours (curve 2, Fig. 2) and

Card 3/7

22435

S/080/61/034/007/010/016
D223/D305

Effect of the nature of ...

movement and temperature curves show small gradual decrease with time. The contact area of brake to drum was only 35-40 % compared to the sulphurated oil of nearly 100 %. Tests with oils MK with 0.6 % of molybdenum disulphide, AK-10 with additions of different quantities of IP-22 and industrial 12 with 1.5 % of tsiatim-5 did not give positive results, since they behaved in the same manner as natural sulphur. The sulphurated oil protects the working parts of machine by the formation of thin layer of sulphides FeS , FeS_2 , Fe_3S_4 . With the formation of iron sulphides, the cubical lattice of alpha-Fe changes into hexagonal lattice FeS which, by analogy with graphite, possesses lubricating properties. To investigate the problem of effect of interaction products of S and hydrocarbons and also the additions of different organic compounds of sulphur, tests were done with a series of organic compounds (mercaptan sulphide, de- and polysulphides, thiophen etc.). The results show that disulphides, in particular dibenzene disulphide have the same effect as sulphurated oil, while other groups of sulphur organic compounds have not. This necessitated an examination of organic

Card 4/7

22435

S/080/61/034/007/010/016
D223/D305

Effect of the nature of ...

polysulphides R_2Sn , preferably dibenzene polysulphides $C_6H_5CH_2SnCH_2C_6H_5$ with $n > 2$. These were prepared by adding corresponding quantities of sulphur to dibenzene disulphide at $150^\circ C$. These compounds with 0.9 - 1.0 % of sulphur were found to be quite effective. There are 5 figures and 3 references: 2 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: Diesel power, 35, 11, 32, 1957.

SUBMITTED: February 1, 1961

Card 5/7

VORONKOV, M.G.

Interatomic distances and nature of Si - O bonds in silicates.
Dokl.AN SSSR 138 no.1:106-109 My-Je '61.

1. Institut khimii silikatov AN SSSR. Predstavлено akademikom
N.V.Еёловым.
(Silicates) (Chemical bonds)

VORONOV, MIKHAIL GRIGOR'YEVICH

PHASE I BOOK EXPLOITATION

SOV/6267

Davydova, Viktoriya Pavlovna, and Mikhail Grigor'yevich Voronkov

Polifosfazeny; polimernyye i monomernyye fosfonitril'nyye soyedineniya
(Polyphosphazenes; Polymeric and Monomeric Phosphonitrile Compounds)
Moskva, Izd-vo AN SSSR, 1962. 86 p. 2600 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut khimii silikatov.

Resp. Ed.: M. G. Voronkov, Doctor of Chemical Sciences; Ed. of Publishing
House: V. D. Piastro; Tech. Ed.: G. P. Aref'yeva.

PURPOSE: This book is intended for scientists, engineers, aspirants, teachers,
and students in advanced courses at schools of higher education working in
the field of monomeric and high-molecular compounds.

Card 1/4

Polyphosphazenes (Cont.)

SOV/6267

COVERAGE: This book is reportedly the first effort to review and systematize the existing literature on polyphosphazenes. It is based on journal articles and patents published up to 1961. It is expected that materials prepared from phosphonitrile polymers will be better than materials from the poly-organosiloxanes presently used. The chapter on nomenclature was written by M. G. Voronkov, and the other chapters were prepared by V. P. Davydova. There are 23 Soviet and 218 non-Soviet references.

TABLE OF CONTENTS:

Preface	3
Introduction	4
Nomenclature	6
Phosphonitrile Chlorides and Bromides	8
Card 2/4	

VORONKOV, M. G.

PHASE I BOOK EXPLOITATION

SOV/6034

Konferentsiya po khimii i primeneniyu fosfororganicheskikh soyedineniy. 2d,
Kazan', 1959.

Khimiya i primeneniye fosfororganicheskikh soyedineniy, trudy (Chemistry
and Use of Organophosphorus Compounds; Conference Transactions) Moscow,
Izd-vo AN SSSR, 1962. 630 p. Errata slip inserted. 2800 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Kazanskiy filial.

Resp. Ed.: A. Ye. Arbuzov, Academician; Ed. of Publishing House: L. S.
Povarov; Tech. Ed.: S. G. Tikhomirova.

PURPOSE: This collection of conference transactions is intended for chemists,
process engineers, physiologists, pharmacists, physicians, veterinarians,
and agricultural scientists.

COVERAGE: The transactions include the full texts of most of the scientific
papers presented at the Second Conference on the Chemistry and Use of

Card 1/14

Chemistry and the Use of Organophosphorus (Cont.)

SOV/6034

Organophosphorus Compounds held at Kazan' from 2 Nov through 1 Dec 1959. The material is divided into three sections: Chemistry, containing 67 articles; Physiological Activity of Organophosphorus Compounds, containing 26 articles; and Plant Protection, containing 12 articles. The reports reflect the strong interest of Soviet scientists in the chemistry and application of organophosphorus compounds. References accompany individual reports. Short summaries of some of the listed reports have been made and are given below.

TABLE OF CONTENTS:[Abridged]:

Introduction (Academician A. Ye. Arbuzov)

3

TRANSACTIONS OF THE CHEMISTRY SECTION

Gefter, Ye. L. [NII plastmass (Scientific Research Institute of Plastics, Moscow]. Some Prospects for the Industrial Use of Organophosphorus Compounds

46

Card 2/14

Chemistry and the Use of Organophosphorus (Cont.)

SOV/6034

The preparation and uses of organophosphorus compounds are discussed, and prospects for obtaining new high-molecular organophosphorus compounds are outlined. Gefter recommends 1) the preparation of new organophosphorus polymers based on oxides of unsaturated tertiary phosphines, 2) the utilization of thermal stability and good mechanical properties of known organophosphorus compounds as a basis for creating new heterochain phosphorus-containing compounds, and 3) application of the latest methods currently used in the chemistry of high-molecular compounds to organophosphorus polymers.

Orlov, N. F., and M. G. Voronkov [Institut khimii silikatov (Institute of Silicate Chemistry, Leningrad)]. New Methods of Synthesis of Triorganosilyl Esters of Orthophosphoric and Alkylphosphonic Acids

212

New methods have been developed for the synthesis of tris-(triorganosilyl)-phosphates $(R_3SiO)_3PO$, bis-(triorganosilyl)methylphosphonates $CH_3(R_3SiO)_2PO$, and organophosphorus-silicon polymers based on H_3PO_4 and $CH_3PO(OH)_2$. One method is based on the interaction of

Card 3/14

ORLOV, N.F., VORONKOV, M.G.

New ways to synthesize triorganosilyl esters of orthophosphoric and alkylphosphinic acids.

Khimiya i Primeneniya Fosfororganicheskikh Soedinenii (Chemistry and application of organophosphorus compounds) A. YE. APTEROV, Ed.
Publ. by Kazan Affil. Acad. Sci. USSR, Moscow 1962, 632 pp.

Collection of complete papers presented at the 1975 Kazan Conference on Chemistry of Organophosphorus Compounds.

33988
S/062/62/000/002/013/013
B117/B138

5.2420
5.2410

AUTHORS:

Shchukovskaya, L. L., Voronkov, M. G., and Pavlova, O. V.

TITLE:

New method of N-dimethyl-B-difluoro borazene synthesis

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 2, 1962, 366

TEXT: The new method consists in the separation of hydrogen fluoride from N-dimethyl-B-trifluoro borazane heated with aluminum dust in vaseline oil medium. $C_2H_7NBF_3$ (boiling point 149 - 150°C (5 mm Hg), dry aluminum dust, and vaseline oil (boiling point 210 - 230°C (2 mm Hg)) were slowly heated in a distilling flask on Wood's alloy. At 278° hydrogen started separating energetically and the collecting vessel connected with the gasometer by way of a cooling trap rapidly filled with white brilliant N-dimethyl-B-difluoro borazane crystals. Owing to the vaseline oil the course of the reaction $6(CH_3)_2NH \cdot BF_3 + 2Al \rightarrow 6(CH_3)_2NBF_2 + 2AlF_3 + 3H_2$ was very smooth and easy to control. Yield of N-dimethyl-B-difluoro borazene: 85 - 88%. Some compounds of the type R_2NBF_2 , which are still being examined, were obtained in a similar

Card 1/2

New method of N-dimethyl-B-difluoro...

33988
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B117/B138

manner. Hydrogen fluoride could not be separated from N-dimethyl-B-trifluoro borazane by heating with KF. There are 2 non-Soviet references. The two references to English-language publications read as follows: J. F. Brown, J. Amer. Chem. Soc. 74, 1219 (1952); A. B. Burg, J. Banus, J. Amer. Chem. Soc. 76, 3903 (1954).

ASSOCIATION: Institut khimii silikatov Akademii nauk SSSR (Institute of Silicate Chemistry of the Academy of Sciences USSR) ✓

SUBMITTED: August 10, 1961

Card 2/2

33923

S/079/62/032/002/008/011
D204/D303

5. 3700

AUTHORS: Orlov, N.F. and Voronkov, M.G.

TITLE: Silico-organic esters of methyl phosphinic acid (MPA)

PERIODICAL: Zhurnal obshchey khimii, v.32, no. 2, 1962, 608-612

TEXT: This is a description of the methods of synthesis of the hitherto unknown bis (triorganosilyl) methyl phosphinates, based on interaction of $\text{CH}_3\text{P(O)(OH)}_2$ with: (1) Triorganosilanol: $\text{CH}_3\text{P(O)}[\text{OSiEt}_3]_2$ was prepared in 68% yield from Et_3SiOH (2 moles) and MPA (1 mole), by heating for 2 hrs, removing continuously the water formed. (2) Triorganosilanes: $\text{CH}_3\text{P(O)}[\text{OSiEt}_2\text{Me}]_2$, $\text{CH}_3\text{P(O)}[\text{OSiEt}_3]_2$, $\text{CH}_3\text{P(O)}[\text{OSiMe(n-Pr)}_2]_2$, $\text{CH}_3\text{P(O)}[\text{OSiMe(Ph)}_2]_2$ and $\text{CH}_3\text{P(O)}[\text{OSiEt(Ph)}_2]_2$ were synthesized from the corresponding trisubstituted silanes and MPA in the molar ratio of 2:4:1, in presence of colloidal Ni, in 70-90% yields, by heating for ~3 hr at 130°C. (3) Triorganoalkoxysilanes: $\text{CH}_3\text{P(O)}[\text{OSiEt}_3]_2$ and $\text{CH}_3\text{P(O)}_3$

Card 1/3

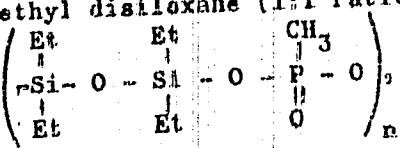
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D204/D303

Silico-organic esters of ...

$[\text{OSi}(\text{Ph})_3]_2$ were obtained from Et_3SiOMe and $(\text{Ph})_3\text{SiOEt}$ taken in the molar ratio of silane: MPA equal to 2.4:1 and 2:1 respectively, in 60 and 70% yields. The reaction of MPA and tetraethyl disiloxane (1:1 ratio) was catalyzed by colloidal Ni and yielded



whilst another polymer: $\left(\begin{array}{c} \text{CH}_3 & \text{CH}_3 \\ | & | \\ -\text{O}-\text{P}-\text{O}-\text{Si} & \\ || & | \\ \text{O} & \text{CH}_3 \end{array} \right)_n$ was obtained from an equimolecular

mixture of MPA and dimethyl diethoxysilane. All the phosphinates, with the exception of crystalline $\text{CH}_3\text{P}(\text{O})[\text{OSi}(\text{Ph})_3]_2$, were colorless, high-boiling liquids, readily hydrolyzed by water. The polymers were pale yellow oils. Experimental details are given and physical constants of

Card 2/3

Silico-organic esters of ...

33923
S/079/62/032/002/008/011
D204/D303

the products are tabulated. There are 1 table and 17 references: 11 Soviet-bloc and 6 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: R.O. Sauer, J.Am.Chem.Soc., 66, 1707, (1944); W.H. Keeber and H.W. Post, J.Org.Ch., 21, 509, (1958); Canadian Pat. 496,623 (1953); Ch.A., 47, 4128, (1953).

ASSOCIATION: Institut khimii silikatov Akademii nauk SSSR (Institute of Silicate Chemistry of the Academy of Sciences, USSR)

SUBMITTED: March 2, 1961

✓

Card 3/3

S/079/62/032/002/009/011
D204/D303

AUTHORS: Orlov, N.F., Bogatkin, R.A., Sergeyeva, Z.I., and Veronkov,
M.G.

TITLE: Interaction of triorganosilanes with carboxylic acids in
the presence of colloidal nickel

PERIODICAL: Zhurnal obshchey khimii, v. 32, no. 2, 1962, 650-651

TEXT: A short note on the reactions of triethyl silane with carboxylic acid, using colloidal Ni as a catalyst. Monocarboxylic acids reacted giving the corresponding triorganosilyl esters, in 50-85% yield. Esters of general formula $\text{Et}_3\text{SiOCO}(\text{CH}_2)_n\text{OCOSiEt}_3$ were synthesized in 60-80% yields from simple dicarboxylic acids. Colloidal Ni promoted hydrogenation as well as dehydrocondensation, as was shown by the reactions of Et_3SiH with halogenated and unsaturated acids. Monochloracetic acid yielded either $\text{Et}_3\text{SiOCOCH}_2\text{Cl}$ or $(\text{Et}_3\text{SiOCOCH}_3 + \text{Et}_3\text{SiCl})$, depending on the molar ratio of the reagents. Unsaturated acids yield hydrogenated

Card 1/2

S/079/62/032/002/009/011

Interaction of triorganosilanes ... D204/D303

products; e.g. crotonic acid gave the n-butyric ester. Action of H_2PtCl_6 as the catalyst is similar to that of colloidal Ni. No experimental details are given. There are 3 Soviet-bloc references.

SUBMITTED: July 17, 1961

✓

Card 2/2

VORONKOV, M.G.

Nature of Si - O bonds in silicates. Zhur. ob. khim. 32 no. 7 2391-
2392 J1 '62. (MIRA 15:7)

1. Institut organicheskogo sinteza AN Latviyskoy SSR.
(Silicates) (Chemical bonds)

ORLOV, N.F.; BOGATKIN, R.A.; SERGEIEVA, Z.I.; VORONKOV, M.G.

Interaction of hydroxysilanes with saturated acids in the
presence of colloidal nickel. Zhur. ob. khim. 32 no. 3:2561-2566
Ag '62. (MIRA 15:9)

(Silane) (Acids, Organic)

15.7140

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S/080/62/035/003/015/024
D227/D302

AUTHORS: Lasskaya, Ye. A. and Voronkov, M. G.

TITLE: Application of organosilicon compounds for hydrophobing
heat insulating articles made of expanded perlite

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 3, 1962, 612-617

TEXT: To improve water resistance of articles made of expanded perlite, the authors studied the use of organosilicon compounds as possible hydrophobic agents. The compounds tested were: aqueous solution of polyethylhydrosiloxane ГКЖ-94 (GKZh-94) and aqueous solutions of sodium methyl silicilate МДГ-9 (MSG-9) and ethyl silicicate GKZh-10. The solutions were deposited onto air-dried perlite samples in one or two layers and their effectiveness was determined by immersing the samples in water and measuring the amount of water absorbed. The results showed that water-proofing of articles substantially reduces the water absorption capacity. For perlites bonded with concrete, glass and silica, GKZh-94 (~10%) proved to be very effective. The high hydrophobic activity of polyethylhydrosiloxane ГКЖ-94 (GKZh-94) is due to the presence of hydrophobic methyl groups in the molecule.

Card 1/2

S/080/62/035/003/015/024
D227/D302

Application of organosilicon ...

loxanes on the alkali-containing materials is explained by the chemical reaction of the surface materials with Si-H bond giving an organosilicon film and also by hydrolysis of this bond resulting in fusion of the polysiloxane chains. For gypsum and lime-bonded perlites, sodium alkyl silicates (3 - 4%) proved more effective. In general, treatment of various perlites with the mentioned silicon compounds tended to increase their water resistance by up to 65 times. A series of experiments has also been conducted to determine the effect of hydrophobing treatment on other properties of expanded perlite such as water desorption and frost stability. It has been shown that after the treatment with up to 5% solutions of the silicon compound, the samples could withstand up to 25 "freeze-thaw" cycles and up to 30 of "wet-dry" cycles. There are 8 tables and 2 Soviet-bloc references.

SUBMITTED: September 26, 1961

Card 2/2

LASSKAYA, Ye.A.; VORONKOV, N.G.

Imparting hydrophobic properties to natural siliceous-limestone materials by treating them with organosilicon compounds.

Zhur.prikl.khim. 35 no.5:1093-1101 My '62. (MIRA 15:5)

(Building materials)

(Waterproofing)

(Silicon organic compounds)

SHCHUKOVSKAYA, L.L.; VORONKOV, M.G.; PAVLOVA, O.V.

New methods of synthesizing β -monochloro-substituted N-dialkylborazines and N-trialkylborazanes. Dokl. AN SSSR 143 no.4: 887-889 Ap '62. (MIRA 15:3)

1. Institut khimii silikatov AN SSSR. Predstavлено akademikom A.V.Topchiyevym.

(Borazane) (Borazine)

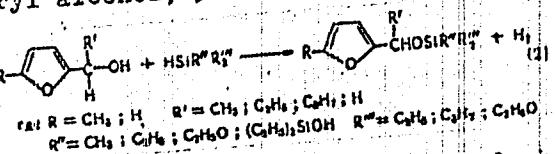
S/020/62/145/004/017/024
B110/B144

AUTHORS: Lukevits, E. Ya., Romadan, Yu. P., Giller, S. A., 'Academician AS LatSSR, and Voronkov, M. G.

TITLE: Organosilicon compounds of the furan series. Organosilicon derivatives of furyl carbinols and 5-substituted furfuryl alcohols

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 145, no. 4, 1962, 806 - 808

TEXT: Furfuryl oxysilanes were produced: (1) by reaction of trialkyl chlorosilanes with furyl alkyl and furyl aryl carbinols, (2) by reaction of silanes with furfuryl alcohol, 5-methyl furfuryl alcohol, and furyl alkyl carbinols



using 10⁻⁵ moles of H₂PtCl₆ per 1 mole of isopropyl alcohol as catalyst at

Card 1/2

3/020/62/145/004/017/024

B110/B144

Organosilicon compounds of the ...

80 - 100°C. Their composition and properties are indicated (Table). 5-nitro-furfuryl oxytrimethyl silane was obtained from ethereal solutions of 5-nitro-furfuryl alcohol, pyridine, and trimethyl chlorosilane. Silane reacts with H_2PtCl_6 in isopropyl alcohol to give furfuryl oxysilane. Dioxane containing 0.05 moles of H_2O hydrolyzes triethyl silane in the presence of H_2PtCl_6 to give triethyl silanol. Triethyl silane reacting with triethyl silanol in the presence of H_2PtCl_6 yields small amounts of hexaethyl disiloxane by anhydrocondensation. There is 1 table. ✓

ASSOCIATION: Institut organicheskogo sinteza Akademii nauk LatvSSR
(Institute of Organic Synthesis of the Academy of Sciences
LatSSR)

SUBMITTED: March 12, 1962

Table. Furfuryl oxysilanes ($R'-\text{C}_5\text{H}_4-\text{R}'$). Legend: (1) mode of production,
(2) boiling point, °C, (3) pressure, mm Hg.

Card 2/6 2

VORONKOV, M. G.; DEYCH, A. Y.

"Donor-acceptor properties of the siloxane bond."

Second Dresden Conference on Organic and Non-Silicate Chemistry, 26-30 March 63, East Germany."

Institute for Organic syntheses of the Latvian Academy of Science, Riga, USSR.

VORONKOV, M.G.; SHOROKHOV, N.V. [deceased]; DYMARSKAYA, O., red.;
PILADZE, Ye., tekhn. red.

[Water-repellent coatings in construction] Vodoottalkivaju-
shchie pokrytiia v stroitel'stve. Riga, Izd-vo Akad. nauk
Latviiskoi SSR, 1963. 189 p. (MIRA 16:4)
(Waterproofing) (Silicon organic compounds)

4-7484-52 201 (m) 500 (c) 7 (APR 01) 1964/PT-4 RU

ACCESSION NR: AR4048174 9/00/1/84/000/000/0031/0001

SOURCE: Ref. sh. Khimiya, Abs. 90210

AUTHOR: Biryukov, L. P., Varonkov, M. G.

TITLE: Nuclear quadrupole resonance in the methylchlorosilanes

CITED SOURCE: Izv. Latv. SSR. Ser. Khim. No. 4, 1963, 493-498

TOPIC TAGS: methylchlorosilane, silicoorganic compound, nuclear quadrupole resonance, chlorine resonance spectra

TRANSLATION: The nuclear quadrupole resonance spectra of C^{36} were studied in the

Card 1/2

L 19424-65

ACCESSION NR: AR4048174

SUB CODE: OC, GC

ENCL: 00

Card 2, 2

CITED SOURCE: Izv. Akad. Nauk SSSR, Ser. Khim., no. 6, 1963, 695-719

TOPIC TAGS: nuclear spectroscopy, line spectrum, resonance lines, nuclear quadrupole resonance

ORLOV, N.F.; BOGATKIN, R.A.; SERGEYEVA, Z.I.; VORONKOV, M.G.

Nickel catalyst in the reactions of organosilane hydrides with
organic acids. Zhur. ob. khim. 33 no.6:1934-1938 Je '63.

(MIRA 16:7)

1. Leningradskiy gosudarstvennyy universitet i Institut
khimii silikatov AN SSSR.

(Silane) (Acids, Organic) (Nickel catalysts)

VORONKOV, M.G.; LIPSHITS, T.S.

Use of the EN-3 polyethylmethylhydrosiloxane waterproofing agent
for the emulsion water-repellent treatment of textile materials.
Zhur.prikl.khim. 36 no.1:152-156 Ja '63. (MIRA 16:5)
(Waterproofing of fibers) (Silicon organic compounds)

1. **What is the primary purpose of the study?**
2. **What is the study's main finding?**
3. **What are the key results of the study?**
4. **What are the implications of the study's findings?**
5. **What are the strengths and limitations of the study?**

Other common elements in the environment include, aluminum, beryllium, bismuth, cadmium, lead, tin, tungsten, vanadium, zinc and zirconium, all of which are chemically reactive.

Time	Order	2000	1999	1998	1997
1	1	1	1	1	1
2	2	1	1	1	1
3	3	1	1	1	1
4	4	1	1	1	1
5	5	1	1	1	1
6	6	1	1	1	1
7	7	1	1	1	1
8	8	1	1	1	1
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10	10	1	1	1	1
11	11	1	1	1	1
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97	97	1	1	1	1
98	98	1	1	1	1
99	99	1	1	1	1
100	100	1	1	1	1

L-43215-5

ACCESSION NR AM5003774

describes typical examples of syntheses. The book includes general tables of
the properties of the elements, the periodic table, and the elements and their
compounds. The book is intended for a general audience.

A detailed description of the book is as follows: 1 part to book, 13 parts technical
and 1 part to book. The book is intended for a general audience.

TABLE OF CONTENTS (at end of book)

Part I. Hydrosilylation reaction

Ch. I. Factors affecting the rate and direction of the hydrosilylation reaction -- 7

 Kinetics of the reaction and reaction mechanism -- 18

 Orientation of the Si-H bond -- 23

 Regioselectivity of the Si-H bond -- 64

Ch. II. Hydrosilylation of alkenes and alkynes -- 72

 Alkenes and alkynes as reactants in hydrosilylation reactions -- 72

 Alkenes and alkynes as products of hydrosilylation -- 99

 Alkenes and alkynes as catalysts -- 101

Page 2/3

16 0561R-35

ACCESSION NO. A1500374

Part 3. Examples of preparative synthesis --- 89
Part 4. Index of the compounds of carbon, hydrogen and chlorine and hydro-
genation of the same --- 351
Bibliography --- 350

SUBMITTED: 21Jul61

NO REF Sovt 207

SUB CLASS: CIC

ORDER: 119

Card 3/3

VORONKOV, M. G.; DEYICH, A. Ya., Riga

"Acceptor complexes of monosubstituted benzenes C_6H_5X with electron donor organic compounds."

report submitted for 8th Intl Conf on Coordination Chemistry, Vienna, 7-11 Sep
64/

16707-65

QUESTION NO.: A35000783

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1970/10/6

1100 J. Neurosci., November 1, 2006 • 26(44):1093–1100

SOURCE: Rei. zh. Fizika, Abs. 107:1

NAME: Yukov, I. P.; Safin, I. A.; Vorotilov,

TYPE: Nuclear quadrupole resonance of certain organyl chlorosilanes and silico-germanes (1)

CITED SOURCE: Izv. AN LatvSSR. Ser. fizika, no. 2, 1954.

TIPI^C TAGS: nuclear quadrupole resonance, piezoelectric property, organochlorosilane, organochlorogermane

The NMR spectra of 7 organochlorosilanes had δ -values which were dependent on the substituents in the molecule and were investigated. It was found that this compound has piezoelectric properties. A direct relationship was found between the piezoelectric constants and the δ -values of the organochlorosilanes. The NMR spectra of

Card 1/2

L 16707-65
ACCESSION NR: AR5000783

trichlorosilane. The widths of the lines for the observed signals were estimated. It was observed that angular chemical non-equivalence of the silicon atoms was observed in the unit crystalline structure of the samples of the type R_2SiCl_3 .

SUB CODE: HF, OC

ENCL: DC

Card 2/2

REF ID: A6518253 TWF-1 Pg-4/Pgs-4 RPL 1000P
ACCESSION NR: A6518253 3/2002/04/007/1215/122

AUTHOR: Veronkov, N. G.; Slobrik, Yu. I.

TITLE: Synthesis of organofluorodiluoxane

SOURCE: AK SSSR. Izvestiya Akademii Nauk SSSR. Seriya Khimicheskaya, No. 7, 1959, p. 1210-1221

TOPIC CODE: organofluorosilane, synthesis, glutaraldehyde, ammonium bifluoride, synthesis of fluoride allyl silane, cycloalkylfluorodiluoxane, synthesis of allyl silane, triallylsilane, osilane

ABSTRACT: A direct and inexpensive method was worked out for the synthesis of organofluorodiluoxane based on reaction of the corresponding difluorodiluoxane (1.0 g ammonium powdered p-toluenesulfonate in 0.5 ml acetone

R_2SiCl_2 + 2 - 0.1 M LiCl + R_2SiF_4 + 1.0 - 0.5 ml HCl + 0.5 - 1.0 ml $CH_2=CH-CH_2-CH_2-CH=CH_2$

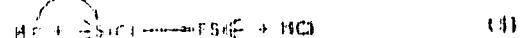
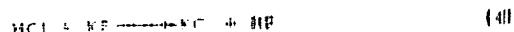
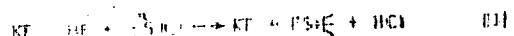
The following allyl, cycloalkyl and arylallylfluorodiluoxanes were obtained in 80-90% yield: trimethylallyl, 2-allylpropyl, 2-allylbutyl, 2-allylhexyl, allyl, heptyl or cyclohexyl. The method is also applicable to the synthesis of allyl silane.

Card 1/3

L 6940-69
ACCESSION RE: AP1042871

hexylchlorosilane. The last three experiments used phenyl dichloroethane. Reactions 1 and 2 were carried out in the same manner as the first three. In these reactions the phenyl radical was generated by the reduction of phenyl dichloroethane with NaBH₄ + HCl.

The conversion of 1 or 2 at 10% radical on NaBH₄ in addition to the phenyl radical, was prevented since upon reduction of the radical mechanism was suppressed. In these cases, the conversion was 100%.



Trialkylchlorosilanes may be converted to the corresponding difluorochloro derivatives in 50-60% yield by reaction with saturated aqueous solutions of ammonium or potassium fluoride or bisulfide:

Card 2/3

ACCESSION NR: A94042071

13



A method was also worked out for the synthesis of triallylsilanes by reaction of the corresponding triallylsilane with TiCl₄ or SnCl₄. Only one reaction, 6 equations, and 2 formulas.

ASSOCIATION: Institut khimii siliikatov im. I. V. Grebennikova Akademii Nauk SSSR (Institute of Silicate Chemistry, Academy of Sciences, USSR), Institute of Organic Chemistry, Institute of Organic Synthesis Academy of Sciences, LatvSSR

SUBMITTED: 13 Dec 68

IMPL: 00

SUB CODE: 00

NO REF BON: 008

OTHER: 000

Card 3/3

VORONKOV, M.G.; DEYCH, A.Ya.

Donor-acceptor characteristics of a siloxane bonding. Struk.
strukt. khim. 5 no.3:482-489. My-Je '64.

(MIA 18:7)

1. Institut organicheskogo sinteza AN Latvийской SSR.

SOKOLOV, G.P.; GILLER, S.A., akademik; VORONKOV, M.G.

Reaction of organomagnesium compounds with 2,5-dimethoxy-2,5-dihydrofuran. Dokl. AN SSSR 158 no.3:675-678 S '64. (MIRA 17:10)

1. Institut organicheskogo sinteza AN Latviyskoy SSR. 2. AN Latviyskoy SSR (for Giller).

VORONKOV, M.G.; BIRYUKOV, I.P.

Problem of the additive scheme of calculation of a mean frequency in the nuclear quadrupole resonance spectrum of organylchlorosilanes. Teoret. i eksper. khim. 1 no.1:122-124 Ja '65.

Nuclear quadrupole resonance spectra of chlorogermanes. Ibid.:124-126 (MIRA 18:7)

1. Institut organicheskogo sinteza AN Latviyskoy SSR, Riga.

BIRYUKOV, I.P.; VORONKOV, M.G.; SAFIN, I.A.

Study of the induction effect of substituents in organochlorosilanes
by the nuclear quadrupole resonance method. Tseret, i eksper.
khim. l. no. 3:373-380 My-Ja '65. (NIRA 18:9)

1. Institut organicheskogo sinteza AN Latviyskoy SSR, Riga.

12982-66 EWT(m)/EWP(j)/T RPL UN/RI

ACC NR: AP6001461	SOURCE CODE: UR/0379/05/001/005/0663/0674	15	15
AUTHOR: Voronkov, M. G.; Deych, A. Ya.			
ORG: Institute of Organic Synthesis, AN Latv. SSR, Riga (Institut organicheskogo sinteza, Riga Institute of Civil Aviation Engineers (Rīgas Politehniski inženieru institūts) Rīga)			
TITLE: Formation of complexes with charge transfer in systems of monosubstituted benzenes C_6H_5X with electron-donor organic compounds			
SOURCE: Teoreticheskaya i eksperimental'naya khimiya, v. 1, no. 6, 1959, 663-674			
TOPIC TAGS: intermolecular complex, benzene, electron donor			
<p>ABSTRACT: The paper deals with the formation of labile complexes with charge transfer in systems of C_6H_5X monosubstituted benzenes with organic compounds (D) containing a hetero atom with an unshared pair of electrons (O, N, and Cl). Using refractometry, from the character of $n(V)$ isotherms of over 400 liquid binary systems C_6H_5X-D, the authors found that the tendency of C_6H_5 molecules to form complexes is most pronounced if X is a meta-orientant, and increases with increasing dipole moment of the molecule. The complexing tendency of electron-donor components (D) decreases in the following order of variation of the hetero atom in D: $O > Cl > N$, and is not proportional to the basicity of the nonbenzenoid component. Complex-formation in C_6H_5X-D systems has a donor-acceptor character and is due to the transfer of an electron from D to the aromatic ring with the lower π-electron.</p>			
Card 1/2			

L 12982-66

ACC NR: AP6001461

density. Since the complexes formed differ from ordinary aromatic complexes by a reverse direction of the shift of π electrons, they may be termed "reverse π complexes." The intermediate formation of "reverse complexes" during the initial stage of reactions of nucleophilic aromatic substitution is postulated. Orig. art. has: 3 figures and 4 tables.

SUB CODE: 07 / SUBM DATE: 08Mar65 / ORIG REF: 013 / OTH REF: 015

Card 2/2

SEARCHED INDEXED SERIALIZED FILED APR 20 1963

THE JOURNAL OF CLIMATE VOL. 17, NO. 10, OCTOBER 2004

$$x = \frac{1}{2} \left(\frac{1}{\sqrt{2}} + \frac{1}{\sqrt{2}} i \right)$$

100 mg of each of the following: hexa alkyl dihaloxanthine, bis (2-chloro-4-

silane, entry 50013

ANALYST. — The following analysis of phosphorous acid was obtained in 1896 by Mr. J. H. D. Thompson, of the Bureau of Chemistry, Washington, D. C., from a sample of phosphorous acid which had been obtained by the action of phosphoric acid on aluminum chloride.

1996年1月1日以后新办的外商投资企业，其外债登记由外汇局直接办理。

Consequently, the temperature of the water in the lake is 10.9°C. at 1300 h. |
The water is 10.9°C. at 1300 h. |

APPROVED FOR RELEASE: 03/20/2001

CIA-RDP86-00513R001860920006-9"

A. S. H. TAN

presence of the salts catalyzes the formation of phthalimide in the yields listed below:

ASSOCIATION: Institut khimii silikatov imeni I. A. Grebennikova Akademii nauk SSSR i Institut orzicheskogo sinteza Akademii nauk Latvijskoj SSR (Institute of Chemistry, Institute of Organic Synthesis of the USSR Academy of Sciences and the Latvian Academy of Sciences).

SUBMITTED: 28 Oct 63

111 111 110

BUA 2001: 1

NO REF Sov: 003

OLIVER: Oh

Card 2/2

L 63043-65 EXP(3)/EXP(4)/EXP(5)/EXP(6)/EXP(7)
ACCESSION NO. AF5017777

PC-L43-9-4
UN/0C60/65/038/007/143/1487
546,287

AUTHOR: Vereskov, M. G.; Lashkaryov, Yu. A.; Faschukova, A. A.

TITLE: Nature of the bonding between water-repellent organosilicon coatings and the surface of materials treated

SOURCE: Zhurnal prikladnoi fiziki, v. 30, no. 7, 1965, p. 1487

TOPIC TAGS: hydrophobization, organosilicon compound, water repellent additive, organosilicon coating, polysiloxane film, carbonation, glass bonding

ABSTRACT: The formation of a chemical bond between a water repellent polysiloxane and a glass surface is studied. The hydrophobization of a glass surface with an alkylchloride

Card 1/2

ACCESSION NR: AP5017777

glass with the formation of a surface polyisobutene film which is located in a con-
tinuous fashion to the polyisobutene skeleton of quartz. It was shown that the
main reaction leading to the formation of water-repellent films in polyisobutene-
isobutylene is due to the action with surface OH groups:

In the first study was made to determine the role of carbon dioxide (carbonation) in the process of formation of a hydrophobic film based on water-soluble sulfonated polyesters. It is shown in the table, 1 figure and 7 formulas.

APPLICATION. — *None*

RECORDED 10/16/63

ט'ז

10 SEP 1972 14

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001860920006-9"

L 13481-66		EXT(n)/IMP(j)/T	RM
ACC NR: AP6002222	(A)	SOURCE CODE:	UR/0080/55/030/012/2848/2050
AUTHOR: Voronkov, H. G.; Faytel'son, P. D.			
ORG: Institute of Organic Synthesis AN Latvian SSR (Institut organicheskogo sinteza AN Latvийской ССР)			
TITLE: Low temperature setting of organosilicon resins, lacs and enamels			
SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 12, 1965, 2848-2850			
TOPIC TAGS: organosilicon compound, silicon plastic, resin, plastic coating, secondary amine, INDUSTRIAL CATALYST			
ABSTRACT: Two higher secondary amines $(n\text{-C}_4\text{H}_9)_2\text{NH}$ and $(n\text{-C}_5\text{H}_11)_2\text{NH}$, were evaluated as catalysts for setting (hardening) silicoorganic resins, lacs, and enamels at 20°C. The object of the work was to compare low temperature catalytic setting of silicoorganic resins with high temperature (200°C) non-catalytic setting technique. Secondary amines in the amount of 0.2-0.6 wt % were added to commercial K-41, K-43, K-44, K-48 and K-54 silicoorganic resins containing such pigments as TiO_2 and SiC . The resins were sprayed onto a copper base. The setting period was in the 20-240 min range. It was found that eliphatic secondary			
Card 1/2	UDC: 661.718.5		

L 13481-66

ACC NR: AP6002222

amines containing 8 and 10 carbon atoms are suitable low temperature setting catalysts for silicoorganic resins as they do not cause gelation of lacquer and enamels based on silicoorganic resins. The lacquer and enamels prepared at 20°C by the use of amine catalysts exhibited mechanical and electrical properties and adhesion to the copper base comparable to those resulting from non-catalytic setting of silicoorganic resins at 200°C. It was found that lower amines do not possess catalytic properties for low temperature setting of silicoorganic resins. Orig. art. has: 1 table.

SUB CODE: 07,11/ SUBM DATE: 30Nov64/ ORIG REF: 003/ OTH REF: 002

AR
Card 2/2

BIRYUKOV, I.P.; VORONKOV, M.G.; BABICH, E.D.; ARKHIPOVA, T.N.; VDGVIN, V.M.;
NAMETKIN, N.S.

Nuclear quadrupole resonance of 1,1-dichloro and 1-methyl-1-chloro-1-silacycloalkanes. Dokl. AN SSSR 161 no. 5:1336-1338
(MIRA 18:5)
Ap '65.

1. Institut organicheskogo sinteza AN LatvSSR i Institut neftekhimicheskogo sinteza im. A.V.Topchiyeva AN SSSR.
2. Chlen-korrespondent AN SSSR (for Nametkin).

BIRYUKOV, I.P.; VORONKOV, M.G.; MOTSAREV, G.V.; ROZENBERG, V.R.; SAFIN, I.A.

Nuclear quadrupole resonance method of studying organosilicon compounds containing Si-Cl and C-Cl bonds. Dokl. AN SSSR 162 no.1:130-132 My '65. (MIRA 18:5)

1. Institut organicheskogo sinteza AN Latviyskoy SSR i Kazanskiy fiziko-tehnicheskiy institut AN SSSR. Submitted November 17. 1964.

L 17627-66 EWT(m)/EWP(j) RM

ACC NR: AP6001734

SOURCE CODE: UR/0020/65/165/004/0857/0859

AUTHORS: Biryukov, I. P.; Voronkov, M. G.; Safin, I. A.ORG: Institute for Organic Synthesis, Academy of Sciences, Latvian SSR
(Institut organicheskogo sinteza Akademii nauk LatvSSR)

TITLE: Correlation of the mean nuclear quadrupole resonance frequency with the inductive constants of substituents in organylchlorsilanes 7.4.1.5

SOURCE: AN SSSR. Doklady, v. 165, no. 4, 1965, 857-859

TOPIC TAGS: NMR, NMR spectroscopy, quadrupole moment, organosilicon compound

ABSTRACT: The mean nuclear quadrupole resonance frequency, ν_m^q at 77K, of 36 organylchlorsilanes (general formula $RR'R''SiCl_3^{35}$) was correlated with Taft's σ^* of the various substituents R, R' and R'' on the central silicon atom to extend the work of the authors (Soveshch. po magnitnomu rezonansu, Krasnoyarsk, 1964). The experimental results are presented in graphs and tables. The correlation was effected by the use of equations

$$\nu_m^q = \nu_0^q + k \sum \sigma_i \quad (1)$$

Card 1/2

UDC: 541.67+546.287

L 17627-66

ACC NR: AP6001734

$$\sum_i c_i = k^{-1} (v_m^{77} - v_0^{77}) = \alpha v_m^{77} - \beta, \quad (2)$$

where v_0^{77} , k , α , and β are constants, v_m^{77} the measured frequency, and σ is Taft's induction constant. It is concluded that a comparison of nmr and ngr studies may yield valuable results which will extend the understanding of the nature of the chemical bond. This paper was presented by academician Ia. K. Syrkin on 12 April 1965. Orig. art. has: 3 tables and 1 fig.

SUB CODE: 07/ SUBM DATE: 03Apr65/ ORIG REF: 007/ OTH REF: 003

(u)

Card 2/2

L 32200-66	EWT(m)/T/EWP(j)	IJP(c)	WW/RM
ACC NR: AP6007119	SOURCE CODE: UR/0079/66/036/002/0347/0350		
45 44 P			
AUTHOR: <u>Orlov, N. F.</u> ; <u>Voronkov, M. G.</u>			
ORG: Leningrad Institute of Textiles and Light Industry im. S. M. Kirov (Leningradskiy institut tekstil'noy i legkoy promyshlennosti); Institute of Organic Synthesis, AN LatSSR (Institut organicheskogo sinteza AN LatSSR)			
TITLE: <u>Tris(triorganylsilyl) antimonites</u>			
SOURCE: Zhurnal obshchey khimii, v. 36, no. 2, 1966, 347-350			
TOPIC TAGS: antimony compound, organic synthetic process, silicon compound			
ABSTRACT: A study by N. F. Orlov and M. G. Voronkov contains data on two new methods for the synthesis of tris(trialkylsilyl) antimonites. The first method (A), which is simple and economical, consists of reacting a trialkylsilanol with antimony trioxide on heating:			
$6R_3SiOH + Sb_2O_3 \rightleftharpoons 2Sb(OSiR_3) + 3H_2O$			
<p>The water formed is removed by azeotropic distillation with an inert solvent, e. g., benzene, toluene, etc. The yield reaches 70% of the theoretical. Previously, the authors used a similar method to prepare tri-</p>			
Card 1/3	UDC: 546.287+546.863		

L 32200-66

ACC NR: AP6007119
silanol derivatives of some other trivalent elements or groups: boron,
phosphorus, or vanadyl.

O

The method is similar to that used in the preparation of trialkyl antimonites, $Sb(OR)_3$, by reacting Sb_2O_3 with alcohols. The higher reactivity of trialkylsilanols, as compared with alcohols, can be explained by their higher acidity caused by the $p_{\pi} - d_{\pi}$ interactions between silicon and oxygen atoms.

The second method (B) suggested is the silanolysis of trialkyl antimonites:



On heating of the mixture the alcohol formed is stripped off. It is advisable to add the silanols in small quantities, e.g., dropwise, especially in benzene solution, in order to prevent silanol condensation, thereby increasing the yield of the desired product.

The presence of sodium in catalytic amounts accelerates the reaction; however, the reaction proceeds readily even without any catalyst.

Tris(trialkylsilyl) antimonites are either colorless liquids or crystals with a weak silanol odor. They are stable on storage in dry air, but

Card 2/3

L 32200-66

ACC NR: AP6007119

hydrolyze in humid air. Hydrolytic stability of tris(trialkylsilyl) antimonites increases with increasing length of the organic radical, and is higher than that of the trialkyl antimonites.

The properties of the five compounds synthesized (four of them for the first time) are given in Table 1.

Table 1. Tris(trialkylsilyl) antimonites

Compound	Preparative method	Yield %	bp °C (p in mm Hg)	d ₄ ²⁰	n _D ²⁰	MR _D		Found %		Formula	Calculated	
						Found	Calculated	Si	Si		Si	Si
[(CH ₃) ₂ SiO] ₃ Sb	B	67.0	80° (3)	1.1448	1.4374	89.17	89.13	31.25	31.32	C ₆ H ₁₂ O ₃ SbSi ₃	31.27	31.34
[(CH ₃) ₂ C ₂ H ₅ SiO] ₃ Sb	B	90.0	132 (6)	1.1313	1.4508	102.59	102.66	28.25	—	C ₁₁ H ₂₂ O ₃ SbSi ₃	28.22	—
[(CH ₃ (C ₂ H ₅) ₂ SiO) ₂ Sb	A	61.5	150 (3.5)	1.1132	1.4588	116.23	116.19	25.75	26.60	C ₁₁ H ₂₂ O ₃ SbSi ₃	25.72	26.80
[(C ₂ H ₅) ₃ SiO] ₃ Sb	A	63.0	170 (3)	1.1041	1.4673	120.69	120.72	23.83	23.83	C ₁₁ H ₂₄ O ₃ SbSi ₃	23.61	16.34
[(C ₂ H ₅) ₃ SiO] ₃ Sb	B	90.5	203 (30)	1.1038	1.4081	129.04	129.72	—	—	C ₁₁ H ₂₄ O ₃ SbSi ₃	21.61	16.34
[(C ₂ H ₅) ₃ SiO] ₃ Sb	B		mp 214° (benzene)			—	—	12.68	8.30	C ₁₁ H ₂₄ O ₃ SbSi ₃	12.81	8.31

The refraction increment for the Sb-O bond, absent in the literature according to the authors, was computed to be equal to $5.25 \pm 0.05 \text{ cm}^3$. Orig. art. has: 1 table.

[FSB: v.2, no. 57]

SUB CODE: 07 / SUBM DATE: 05Jan65 / ORIG REF: 010 / OTH REF: 002

Card 3/3

J. 46301-66 EMF(j), EMF(m) KM/W

ACC NR: AP6023577

SOURCE CODE: UR/C409/66/000/003/0328/0331

AUTHOR: Lukevits, E. Ya.; Voronkov, M. G.

10
B

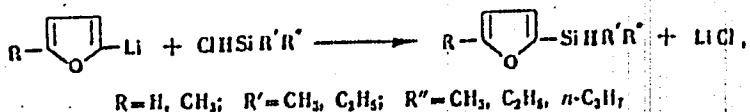
ORG: Institute of Organic Synthesis, Academy of Sciences, Latvian SSR, Riga (Institut organicheskogo sinteza Akademii nauk Latviiyskoy SSR)

TITLE: Organosilicon compounds of the furan series. Part 12. Furylorganylhydrosilanes

SOURCE: Khimiya geterotsiklicheskikh soyedineniy, no. 3, 1966, 328-331

TOPIC TAGS: organosilicon compound, furan compound, silane

ABSTRACT: The synthesis of dialkyl(2-furyl)- and dialkyl(5-methyl-2-furyl)hydrosilanes was carried out as follows:



In the reaction of 2-furyllithium with trichlorosilane, the main product is tetra(2-furyl)silane (I), and tri(2-furyl)silane is formed in only a slight quantity. 2-Furyl-organanylhydrosilanes react readily with the participation of Si-H bonds, and the reactions are rapid and exothermic. Thus, 2-furyl- and 5-methyl-2-furylorganylhydrosilanes

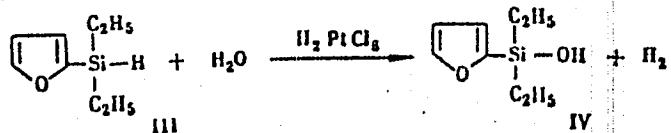
Card 1/3

UDC: 547.72+546.282

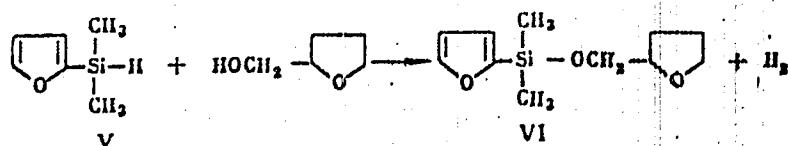
L 46301-66

ACC NR: AF6023577

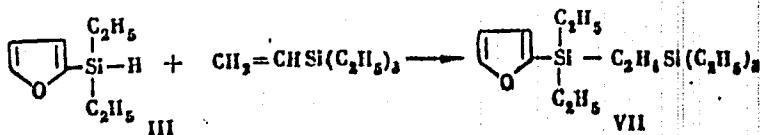
lanes in pyridine instantaneously reduce $HgCl_2$ to Hg metal. In the presence of H_2PtCl_6 , they react vigorously with water dissolved in dioxane. The authors thus synthesized the first representative of 2-furylorganylsilanols, diethyl(2-furyl)silanol:



The dehydrocondensation of dimethyl(2-furyl)silane (V) with tetrahydrofurfuryl alcohol is just as rapid, and forms dimethyl(2-furyl)tetrahydrofuryloxy silane (VI):



Addition of III to triethylvinylsilane in the presence of H_2PtCl_6 also occurs readily:



Card 2/3

L 46301-66

ACC NR: AP6023577

The physical constants, yields, and data of analysis of all the new synthesized furylorganylsilanes are tabulated. Orig. art. has: 1 table.

SUB CODE: 07/ SUBM DATE: 03Apr65/ ORIG REF: 003

ms
Card 3/3

L 40102-66 EWT(u)/EWP(j)/T RM

ACC NR: AP6019567

SOURCE CODE: UR/0080/66/039/006/1345/1351 50

AUTHOR: Voronkov, M. G.; Pashchenko, A. A.; Lasskaya, Ye. A.; Karibayev, K. K.

ORG: Institute of Organic Synthesis, AN LatvSSR (Institut organiceskogo sinteza AN LatvSSR); Kiev Polytechnic Institute (Kiyevskiy politekhnicheskiy institut); Kiev Engineering and Construction Institute (Kiyevskiy inzhenerno-stroitel'nyy institut)

TITLE: Chemical stability of hydrophobic organosilicon coatings on glass

SOURCE: Zhurnal prikladnoy khimii, v. 39, no. 6, 1966, 1345-1351

TOPIC TAGS: polysiloxane, organosilicon compound, protective coating, CHEMICAL STABILITY, CORROSION, COATED GLASS

ABSTRACT: The chemical stability of hydrophobic polyorganosiloxane films deposited on a glass surface from 5% toluene solutions of $RSiCl_3$ was studied by determining their change of wettability, infrared spectra, and thermograms after exposure to the action of aqueous solutions of inorganic acids (HNO_3 , H_2SO_4 , HCl), bases ($NaOH$, $Ca(OH)_2$), and salts (Na_2SO_4 , Na_2CO_3 , $CaCl_2$, $NaCl$, $KMnO_4$). This action was found to break the Si-R bonds. The corrosive attack of the acids and bases increases with their concentration. The greatest stability to the action of corrosive media was displayed by polymethylsiloxane films, and the lowest by polyethylsiloxane ones. Polyallylsiloxanes showed an unexpectedly high chemical stability. Changes in the intensity of the infrared absorption bands and in the heights of exopeaks on the thermograms after exposure to the corrosive agents showed that the stability of the water-

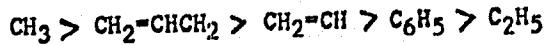
Card 1/2

UDC: 661.718.5

L 40102-66

ACC NR: AP6019567

repellent films as a function of the organic radical R generally decreases in the order



The same order is arrived at by studying the angles of wetting of the polysiloxane films. Orig. art. has: 3 figures and 1 table.

SUB CODE: 07/ SUEM DATE: 26Ju165/ ORIG REF: 012/ OTH REF: 004

Card 2/2 *llb*

ACC NR: AP6033300

SOURCE CODE: UR/0409/66/000/004/0511/0514

AUTHOR: Voronkov, M. G.; Zelchan, G. I.

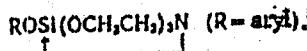
ORG: Institute of Organic Synthesis Academy of Sciences LatSSR, Riga
(Institut organicheskogo sinteza Akademii nauk LatSSR)

TITLE: Atranes. VIII. 1-Aryloxysilatrane

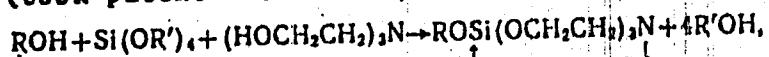
SOURCE: Khimiya geterotsiklicheskikh soyedineniy, no. 4, 1966, 511-514

TOPIC TAGS: aryloxysilatrane, ~~biologically active compound~~ phenyl compound, heterocyclic base compound, esterification, aromatic hydrocarbon

ABSTRACT: The previously unreported 1-aryloxysilatrane (I)



were obtained by the previously described transesterification (USSR patent No. 165722, 1964):



where

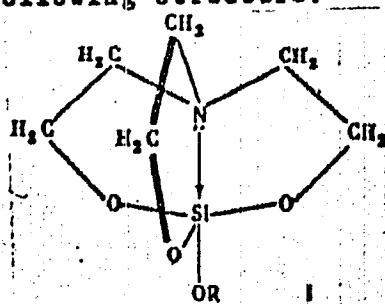
$\text{R} = \text{aryl}$, $\text{R}' = \text{CH}_3, \text{C}_2\text{H}_5$

Card 1/5

UDC: 542.95+546.287+547.89

ACC NR: AP6033300

The reaction takes place on distilling an equimolar mixture of tetraethoxy- or tetramethoxy silanes, triethanolamine, the appropriate phenol (or naphthol), an inert solvent (xylene or toluene), and catalytic amounts of an alkali metal hydroxide or without it. In the case of phenol and its derivatives, the presence of the catalyst increases the yield of I by 5-40%, while in the case of nitrophenoxy silatrans, the yield of I decreased by 4-25% in the presence of the catalyst. Composition, yields, and melting points of I are given in the table. The 1-aryoxy-silatranes are colorless crystals (with the exception of 1-nitrophenoxy silatrane, which is a yellow crystal), soluble in organic solvents and to a certain extent in water. Data on dipole moments and IR and PMR spectra indicate that I have the following structure:



Card 2/5

ACC-NRAP6033300

1-Aryloxy siloxanes $\text{ROSi}(\text{OCH}_2\text{CH}_3)_2\text{N}$

	m.p. °C	Formulas
C_6H_5	228–229.5	$\text{C}_6\text{H}_5\text{NO}_2\text{Si}$
2-CH ₃ CH ₃	218–219.5	$\text{C}_6\text{H}_5\text{NO}_2\text{Si}$
3-CH ₃ CH ₃	162.5–163.5	$\text{C}_6\text{H}_5\text{NO}_2\text{Si}$
4-CH ₃ CH ₃	158–159	$\text{C}_6\text{H}_5\text{NO}_2\text{Si}$
4-(CH ₃) ₂ CC ₆ H ₄	252–253	$\text{C}_6\text{H}_5\text{NO}_2\text{Si}$
5-CH ₃ -2-(CH ₃) ₂ CHC ₆ H ₄	217.5–218.5	$\text{C}_6\text{H}_5\text{NO}_2\text{Si}$
4-ClCH ₃	166–167	$\text{C}_6\text{H}_5\text{ClNO}_2\text{Si}$
2,4,6-Cl ₃ CH ₃	230–230.5	$\text{C}_6\text{H}_5\text{Cl}_3\text{NO}_2\text{Si}$
2-ONC ₆ H ₄	233–234	$\text{C}_6\text{H}_5\text{NO}_2\text{Si}$
3-O ₂ NCH ₃	197.5–198.5	$\text{C}_6\text{H}_5\text{NO}_2\text{Si}$
4-O ₂ NC ₆ H ₄	182.5–184	$\text{C}_6\text{H}_5\text{NO}_2\text{Si}$
2-C ₆ H ₅	184.5–185.5	$\text{C}_6\text{H}_5\text{NO}_2\text{Si}$

Card 3/5

ACC NRAP6033300

Table cont.

21	Found, %			Calc'd, %			Yield %
	C	H	N	C	H	N	
10.44	54.12	6.75	5.35	50.50	53.91	6.41	524
10.51							99
10.03	55.31	6.69	5.04	59.98	55.49	6.81	4.98
							98
10.22	55.36	6.96	5.23	59.98	55.49	6.81	4.98
							83
10.14							82
9.73	55.30	7.05	5.15	59.98	55.49	6.81	4.98
							55
9.97							
8.59	58.95	7.64	4.31	8.68	59.41	7.79	4.33
							70
8.59							
8.74	59.60	7.59	4.53	8.68	59.41	7.79	4.33
							90
8.81							81
9.51	47.61	5.60	4.59	9.31	47.76	5.34	4.54
							~100
9.49							
7.48	38.69	3.88	4.06	7.58	38.88	3.81	3.78
							28
7.47							
9.20	45.93	5.33	8.73	8.99	46.14	5.16	8.65
							53
9.35							
9.10	46.50	5.13	8.69	8.99	46.14	5.16	8.65
							87
9.16							
8.67	46.42	5.22	9.17	8.99	46.14	5.16	8.65
							91
8.95							
8.98	60.45	6.01	4.61	8.85	60.54	6.03	4.41
							88

Card 4/5

*Without a catalyst

ACC NR/AP6033300

Physiological activity of I is considerably lower than that of 1-arylsilatrane, e.g., 1-phenoxy silatrane is 500 times less toxic than 1-phenylsilatrane. The introduction of substituents into aromatic ring of the aryloxysilatrane (CH_3 , $(\text{CH}_3)_2\text{CH}$, Cl, and NO_2) further decreases their toxicity, as shown from the LD_{50} data obtained for white mice:

R	LD_{50} , mg/kg
C_6H_5	200
$p\text{-NC}_6\text{H}_4$	700
$p\text{-ClC}_6\text{H}_4$	1050
$p\text{-CH}_3\text{C}_6\text{H}_4$	1275
$o\text{-CH}_3\text{-2-(CH}_3)_2\text{CHC}_6\text{H}_3$	4000

Orig. art. has: 1 table

[WA-50; CBE No. 14]

SUB CODE: 07/ SUBM DATE: 12Feb65/ ORIG REP: Q07

Card 5/5

SOV/120-59-1-48/50

AUTHORS: Berezin, I. A., Voronkov, M. I.

TITLE: A Capillary Tap (Kapillyarnyy kran)

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 1, p 152 (USSR)

ABSTRACT: The device is illustrated diagrammatically in the figure (see lower half of p 152). It is in the form of a two-way valve with two apertures in its plug. The aperture 2 is used in the preliminary evacuation of the tube leading to the gas container. The gas is let in through the capillary tube 1, whose diameter can be arbitrarily small. This permits a very accurate regulation of the pressure of the gas which is admitted into the vacuum system. The paper contains 1 figure.

ASSOCIATION: Fizicheskiky institut AN SSSR (Physics Institute of the Academy of Sciences USSR)

SUBMITTED: January 20, 1958.

Card 1/1

SOV/120-59-1-47/50

AUTHORS: Berezin, I. A., Voronkov, M. I.

TITLE: A Device for Loading the Samples into a Vacuum System (Bunker
dlya zagruzki obraztsov v vakuumnuyu ustavovku)

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 1, p 152 (USSR)

ABSTRACT: The device described is shown diagrammatically in the figure (see upper half of p 152). The tube 3 contains a polished plug 4 with a helix 2. The tube 3 is inserted into the system in such a way that the open end 1 of the helix is above the crucible of a vacuum furnace. The samples are loaded through the open end of the helical tube in such a way that each turn of the tube contains one sample. The plug is then lubricated with vacuum grease and inserted into the tube. The samples are loaded into the furnace by turning the plug. In this way, the samples are progressively displaced in the helical tube and fall into the oven from the open end of the tube. The paper contains 1 figure.

ASSOCIATION: Fizicheskiy institut AN SSSR (Physics Institute of the Academy of Sciences, USSR)

SUBMITTED: January 22, 1958.

Card 1/1

ZAGOSKINA, Ye.D.; SIKORSKIY, K.P.; ZEVINA, A.N., otv. red.; VORONKOV,
M.I., red.

[Recommended mathematics curriculum for the second half of
the 1962-1963 school-year (grade 5 to 11)] Primernyi plan
raboty po matematike vo vtorom polugodii 1962-1963 uchebnogo
goda (V-XI klassy). Moskva, 1963. 83 p. (MIRA 16:8)

1. Moscow. Gorodskoy institut usovershenstvovaniya uchiteley.
2. Direktor Moskovskogo gorodskogo instituta usovershenstvo-
vaniya uchiteley (for Zevina).
(Mathematics--Study and teaching)

VORONOV, N., kand.tekhn.nauk

Design of reinforced concrete elements for crack resistance.
Prom. stroi. i inzh. soor. 4 no.1:46-47 Ja-F '63. (MIRA 16:3)
(Precast concrete)

VORONKOV, N., dots., otv. za typ.

[Papers published by the Physics Department] Sbornik na-
uchnykh trudov kafedry fiziki. Dnepropetrovsk, No. 7. 1960.

(MIRA 16:10)

48 p.
1. Dnepropetrovsk. Inzhenerno-stroitel'nyy institut. 2. Zame-
stitel' direktora Dnepropetrovskogo inzhenerno-stroitel'nogo
instituta po nauchnoy rabote (for Voronkov).
(Paramagnetic resonance and relaxation)
(Luminescence)

VORONKOV, N.A.

127-12-2/28

AUTHOR: Voronkov, N.A., Mining Engineer

TITLE: Analysis of the Economic Efficiency of the Scraper and Screen Systems of Ore Conveying (Analiz ekonomichnosti skrepernoy i grotokhotnoy skhem dostavki rudy)

PERIODICAL: Gornyy Zhurnal, 1957, No 12, pp 8-12 (USSR)

ABSTRACT: The author analyzed the expenses of ore conveying in the mines of the Kursk Magnetic Anomaly (the chamber-and-pillar system of mining is used), of the Krivoy Rog Basin (the system of breaking off the ore from the sublevel galleries) and of the Tyrnyauz Combine (the level stoping system with ore breaking by blasting charges). Considering all the items composing the total cost of ore conveying, the author concludes that only expenses for driving preparatory and development openings depend on the height of the level, and these expenses are equal for both the scraper and screen systems. Expenses independent of the level height are less with the scraper conveying system than with the screen system. Therefore, the sum of expenses with the scraper system will be lower than that with the screen system for any height of the level.
The article contains 4 graphs.

Card 1/2

127-12-2/28

Analysis of the Economic Efficiency of the Scraper and Screen Systems of
Ore Conveying

ASSOCIATION: Moscow Institute of Non-Ferrous Metals and Gold (Moskovskiy
institut tsvetnykh metallov i zolota)

AVAILABLE: Library of Congress

Card 2/2

"APPROVED FOR RELEASE: 03/20/2001

CIA-RDP86-00513R001860920006-9

СУПРОГА, В.В., АУДАМК, В.Е., БУСЫЕН, В.Н., ВЕРОНОВ, Н.А.
Improving the systems of underground mining of graphite deposits.
(MIRL 12x12)
Gor. zhtr. no. 109-1-12 0 165.

APPROVED FOR RELEASE: 03/20/2001

CIA-RDP86-00513R001860920006-9"

GAYEL', A.G.; VORONKOV, N.A.

Root system of the Scotch pine (*Pinus sylvestris* L.) in the sandy
soils of Kazakhstan and the Don Valley. Bot. zhur. 50 no.4:503-
(MIRA 18:5)
516 Ap '65.

1. Vsesoyuznyy nauchno-issledovatel'skiy institut agrolesomelioratsii,
Pushkino, Moskovskoy oblasti.

GAYEL', A.G.; VORONKOV, N.A.

Interrelationship between trees and herbaceous vegetation in
isolated pine woods of Kazakhstan. Nauch.dokl.vys. shkoly;
biol.nauki no.2:131-140 '63. (MIRA 16:4)

1. Rekomendovana kafedroy geobotaniki Moskovskogo gosudarstven-
nogo universiteta im. M.V.Lomonosova. (FOREST ECOLOGY)
(KUSTANAY PROVINCE—PINE)

VORONKOV, N.A.

Water economy and the formation of young pine growths on the sands
of the Middle Don. Nauch. dokl. vys. shkoly; biol. nauki no.3;
131-138 '63. (MIRA 16:9)

1. Rekomendovana kafedroy geobotaniki Moskovskogo gosudarstvennogo
universiteta im. M.V.Lomonosova.
(Don Valley--Pine) (Plants, Effect of aridity on)

VORONOV, N.A.

Effect of precipitation and its distribution on the growth of
pine in height in isolated pinewoods of Kazakhstan. Vest. Mosk.
un. Ser. 6: Biol., pochv. 17 no.1:59-64 Janv. '62.
(MIRA 15:1)

1. Kafedra geobotaniki Moskovskogo universiteta.
(Kazakhstan—Pine)

FUGZAN, M.D., kand.tekhn.nauk; VORONKOV, N.A., kand.tekhn.nauk

Change in the size of ore in systems with large-scale
blasting. Vzryv. delo no.50/7:157-161 '62. (MIRA 15:9)

1. Kol'skiy filial AN SSSR imeni S.M. Kirova.
(Blasting)
(Mining engineering)

ALEKHICHEV, S.P., kand.tekhn.nauk; VORONKOV, N.A., kand.tekhn.nauk;
TURCHANINOV, I.A., kand.tekhn.nauk

"Mining and mine timbering" by G.D.Chuprunov. Reviewed by S.P.,
Alekhichev, N.A.Voronkov, and I.A.Turchaninov. Gor. zhur.
(MIRA 15:2)
no.12:67-68 D '61.

1. Gorno-metallurgicheskiy institut Kol'skogo filiala AN SSSR,
g. Kirovsk, Murmanskoy obl.
(Mining engineering)
(Mine timbering)
(Chuprunov, G.D.)

VORONOV, N.A., Cand Tech Sci -- (diss) "Study of methods
of conveying ore on the ~~floor of~~ ^{discharge and} ~~mining~~ ^{transporting} of
thick deposits of hard ores." Mos, 1958, 13 pp (Min of Higher
Education USSR. Mos. Inst of Non-Ferrous Metals and Gold im
M.I. Kalinin) 110 copies (KL, 23-58, 105)

SOV-127-58-10-3/29

AUTHORS: Voronkov, N.A. and Guliy, V.M., Mining Engineers

TITLE: A Comparison of the Scraper and Sifter Methods for Delivery
at the Tekeli Mine (Srovneniye skrepernoy i grotkhotnoy
skhem dostavki na rudnike Tekeli)

PERIODICAL: Gornyy zhurnal, 1958, Nr 10, pp 11-13 (USSR)

ABSTRACT: Research conducted by the authors showed that, under the
conditions of the Tekeli Mine, where the mining is done by
the level caving-in system, the sifter scheme of ore de-
livery must be preferred to the scraper method. Even though
the cost of installation of the sifter method is 80% higher
than that of scraper method, it is more advantageous because
its productivity is 45% higher. The sifter method also has
a lower safety factor than the scraper method. There are 3
tables.

Card 1/2

SOV-127-58-10-3/29
A Comparison of the Scraper and Sifter Methods for Delivery at the Tekeli
Mine

ASSOCIATION: Moskovskiy institut tsvetnykh metallov i zolota (The Moscow
Institute of Nonferrous Metals and Gold)
Tekeliyskiy svintsovo-tsinkovyy kombinat (The Tekeli Lead
and Zinc Combine)

1. Mining industry--USSR 2. Ores--Handling

Card 2/2

VORONKOV, N.A.

Shell molding in the medical industry. Med.prom. 10 no.2:19-21
(MIRA 9:8)
Ap-Je '56.

1. Stalingradskiy zavod meditsinskogo oborudovaniya
(SHELL MOLDING (FOUNDING))
(MEDICAL INSTRUMENTS AND APPARATUS)

VORONIKOV, N.A.
BABENKO, L.V.; DAVYDOVA, M.S.; ZAKORKINA, T.N.; BLOKHIN, V.G.; VORONIKOV, N.A.;
NAUMOV, R.L.; KHIZHINSKIY, P.G.

Characteristics of an area of endemic tick-borne encephalitis in the
construction zone of the Krasnoyarsk Hydroelectric Power Station and
development of measures for the protection of workers against ticks;
preliminary report. Med.paraz.i paraz.hol. 27 no.1:6-14 Ja-F '58.
(MIRA 11:4)

1. Iz sektora entomologii Instituta malyarii, meditsinskoy parazito-
logii i gel'mintologii Ministerstva zdravookhraneniya SSSR (dir.
instituta - prof. P.G.Sergiyev, zav. sektorem - prof. V.N.Beklemi-
shev) i Omskogo Instituta epidemiologii, mikrobiologii i gigiyeny.
(ENCEPHALITIS, epidemiology
tick-borne encephalitis in construction zone, protection
of workers (Rus))

VORONKOV, N.A.

Pulsation of ground water and moisture losses in the Archeda-Don
sands. Vest. Mosk. un. Ser. 6: Biol., pochv. 18 no.2:43-52 Mr-Ap
'63. (MIRA 17:10)

1. Kafedra geobotaniki Moskovskogo universiteta.

VORONKOV, N.A.

Some characteristics of water balance of pine in the arid southeastern European part of the U.S.S.R. Vest. Mosk. un. Ser.6: Biol., pochv. 20 no.3:42-52 My-Je '65. (MIRA 18:7)

1. Kafedra geobotaniki Moskovskogo universiteta.

VORONKOV, N.G.; SKORIK, Yu.I.

Methylphenyldifluorosilane. Zhur. ob. khim. 33 no. 10:3450 0
(MIRA 16:11)
163.

PRONYAKOV, G.S.; VORONKOV, N.D.

Automatic pressing of metal powders with a hydraulic press. Avt.pron.
(MIRA 16:10)
29 no.10:29-30 0 '63.

1. Nauchno-issledovatel'skiy institut avtomobil'noy promyshlennosti
i Michurinskiy zavod imeni Lenina.